

CLAIMS

1. Spherical molding sand produced by a flame fusion method, wherein the spherical molding sand comprises as major components  $\text{Al}_2\text{O}_3$  and  $\text{SiO}_2$ , and has an  $\text{Al}_2\text{O}_3/\text{SiO}_2$  weight ratio of 1 to 15 and an average particle size of 0.05 to 1.5 mm.
2. The spherical molding sand according to claim 1, wherein the spherical molding sand has an average particle size of 0.05 to 0.5 mm and a spherical degree of at least 0.95.
3. The spherical molding sand according to claim 1, wherein the spherical molding sand has water absorption of at most 0.8% by weight.
4. The spherical molding sand according to claim 1, wherein the spherical molding sand has a spherical degree of at least 0.98.
5. Molding sand comprising 50% by volume of the spherical molding sand as defined in claim 4.
6. A process for producing the spherical molding sand as defined in claim 1, comprising the step of fusing in flame powdery particles comprising as major components  $\text{Al}_2\text{O}_3$  and  $\text{SiO}_2$ , and having an  $\text{Al}_2\text{O}_3/\text{SiO}_2$  weight ratio of 0.9 to 17 and an average particle size of 0.05 to 2 mm, to form spherical particles.

7. A casting mold comprising the spherical molding sand as defined in claim 1.

8. A casting mold comprising the spherical molding sand as defined in claim 5.

9. A cast product molded by using the mold as defined in claim 7.

10. A cast product molded by using the mold as defined in claim 8.

11. A construction product made of the cast product as defined in claim 9.

12. A construction product made of the cast product as defined in claim 10.

13. A spherical molding sand, wherein the spherical molding sand comprises as major components  $\text{Al}_2\text{O}_3$  and  $\text{SiO}_2$ , and has an  $\text{Al}_2\text{O}_3/\text{SiO}_2$  weight ratio of 1 to 15, an average particle size of 0.05 to 1.5 mm and a spherical degree of at least 0.95.

14. The spherical molding sand according to claim 13, wherein the spherical molding sand has water absorption of at most 0.8% by weight.

15. The spherical molding sand according to claim 13, wherein the spherical molding sand has a spherical degree of at least 0.98.

16. A molding sand comprising 50% by volume of the spherical molding sand as defined in claim 15.

5 17. A process for producing the spherical molding sand as defined in claim 13, comprising the step of fusing in flame powdery particles comprising as major components  $\text{Al}_2\text{O}_3$  and  $\text{SiO}_2$ , and having an  $\text{Al}_2\text{O}_3/\text{SiO}_2$  weight ratio of 0.9 to 17 and an average particle size of 0.05 to 2 mm, to form spherical particles.

10 18. A casting mold comprising the spherical molding sand as defined in claim 13.

19. A casting mold comprising the spherical molding sand as defined in claim 16.

15 20. A cast product molded by using the mold as defined in claim 18.

21. A cast product molded by using the mold as defined in claim 19.

22. A construction product made of the cast product as defined in claim 20.

20 23. A construction product made of the cast product as defined in claim 21.